A New Developmentalist Model of Structural Change, Economic Growth and Middle-Income Trap

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Brazilian New Devopmentalist School

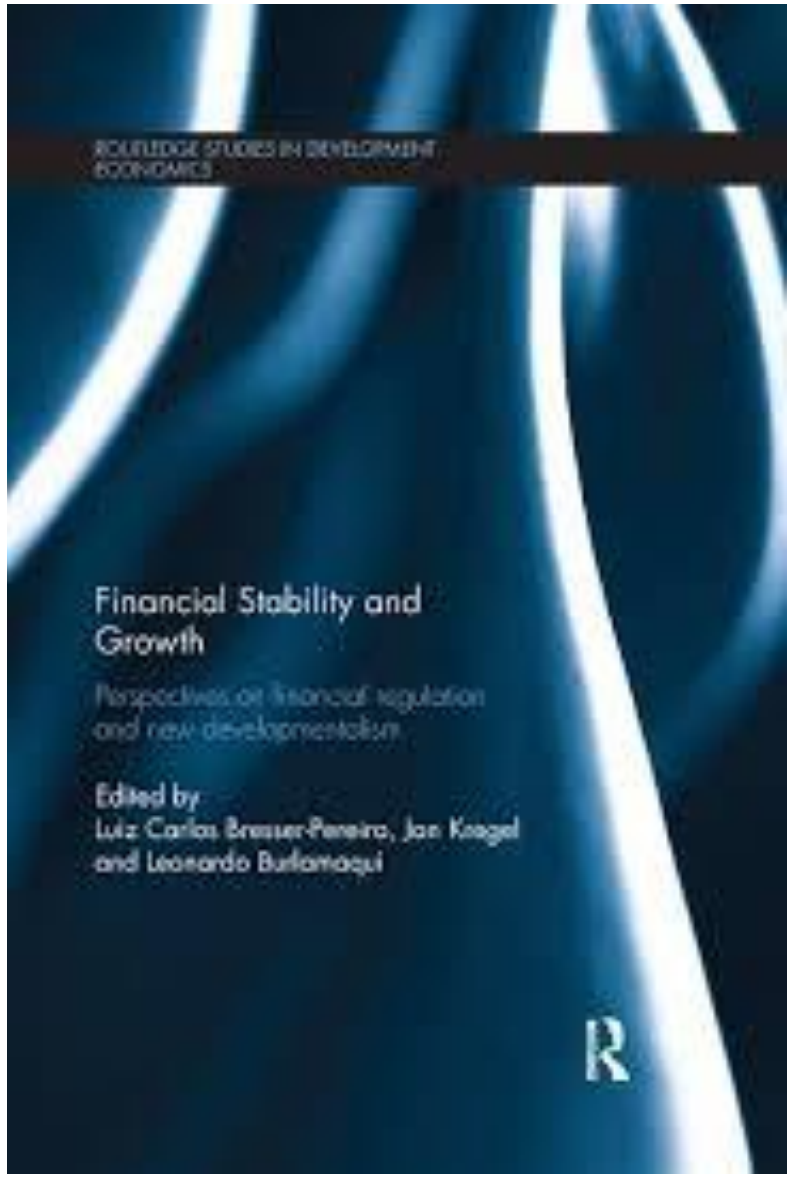
- *The Brazilian New Developmentalist School*, also known as "consensus of São Paulo“, can be understood as an approach to the *deep determinants of economic development* in which *macroeconomic policy regime* has a key role in explaining the long-term growth differentials among countries, notably middle-income countries.
  - Maddison (1988): distinction between the immediate and deep determinants of economic development.
    - Immediate determinants: the existing amount of physical and human capital, the availability of natural resources, the efficiency in the use of existing productive resources and the level of technical and scientific knowledge existing at a given point of time.
    - Deep determinants: refer to the reasons why countries differ from each other in terms of the availability of factors that determine the level of per-capita income.
      - Among the deep determinants we can list geography, institutions, income distribution and economic policy regimes.
      - For new developmentalism, economic policy regime is the deep cause of economic development

The Founding Father: Bresser-Pereira

The school was originated from the seminal works of Bresser-Pereira (2006, 2007 and 2009) who defined *new developmentalism* as a set of proposals for institutional reforms and economic policies, whereby the middle-income developing countries seek to achieve the per-capita income level of developed countries.

This catching-up strategy is explicitly based on the adoption of an *export-led* growth regime, in which the promotion of exports of manufactured goods induces the acceleration of the pace of capital accumulation and the introduction of technological progress and structural change.

In order to do that real exchange rate must be kept at a competitive level in the medium to long-term, what requires the design of a *macroeconomic policy regime* which neutralizes the chronic overvaluation of real exchange rate observed in these countries as a result of the combined effects of Dutch disease and inflows of foreign capital due to the adoption of a external saving growth strategy.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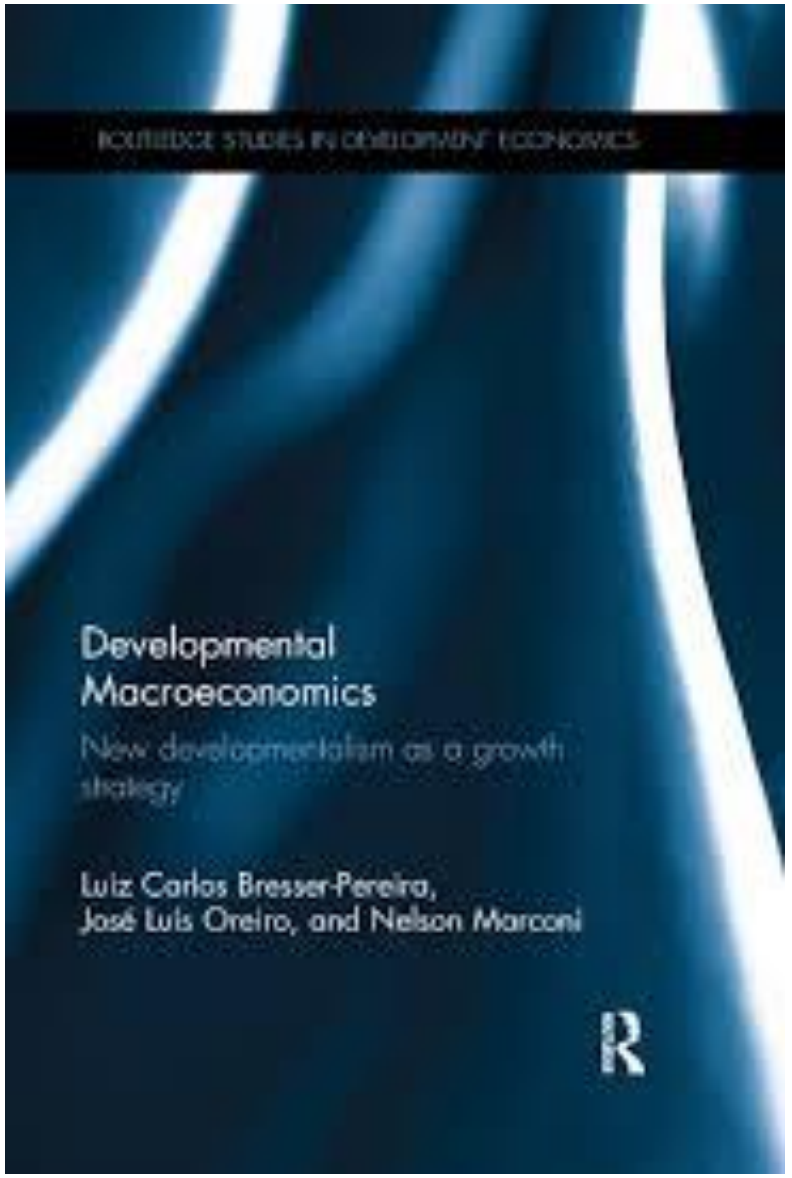
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Core propositions of new developmentalism

- 1 – Economic development is a cumulative process of raising real wages and the standard of living of the population that is made possible by the increase in the labor productivity that stems from the technical progress incorporated in new machinery and equipment and the Structural transformation of the economy, with the labor migration of sectors with the lowest value added per worker to the sectors with the highest value added per worker.
  - The growth rate of productivity depends, therefore, on the growth rate of the capital stock per worker and the evolution of the productive structure over time.

Core propositions

- 2 – The pace of growth of the real output is determined by the growth of autonomous demand that does not create capacity. The investment adjusts, in the long term, to the pace of demand growth, so that it cannot *lead* output growth; But it's *pulled* by it.
  - In an open economy that does not have international reserve currency the output growth will only be sustainable in the long-term, if it is led by the growth of exports; If the growth engine of autonomous demand is domestic demand (e.g. government spending), the growth trajectory will be sooner or later interrupted by a crisis in the balance of payments.

Core propositions

- 3 – The pace of output growth is not limited by the supply side factors, since the pace of growth of capital stock, workforce growth and productivity growth adapt, in the long term, to the pace of growth of non-creating capacity autonomous demand.
- 4 – In the long-term the balance of payments is also not a restriction on long-term growth because the income elasticities of exports and imports are not constant; but adapt to the evolution of the productive structure of the economy. As the productive structure evolves in the sense of greater sophistication or complexity, it follows that the ratio between the income elasticity of exports and imports increases, thus allowing a higher growth rate compatible with balance of payments equilibrium.
    - Regarding the endogenous nature of income elasticities see Oreiro (2016a); Marconi, Araujo and Oreiro (2016) and Missio et al. (2017).

Core propositions

- 5 – The restriction on long-term growth is given, in the case of economies that have abundant natural resources, by the chronic tendency of exchange rate overvaluation that stems from the Dutch disease and foreign capital inflows.
  - This exchange rate overvaluation acts in order to interrupt and, in sequence, reverse the process of productive sophistication, which will produce a reduction in the rate of productivity growth; being the main cause of the *middle-income trap* for some developing countries like Brazil and Argentine.
  - For the Brazilian case see Oreiro et al (2018) and Oreiro and D´Agostini (2017).

Core Propositions

- 6 – Domestic savings and external savings are substitutes, rather than complementary.
  - In fact, aggregate savings are determined by investment; but the composition of the savings depends on the level of the actual exchange rate.
  - An increase in external savings – due to an appreciation of the real exchange rate – is associated with a reduction in domestic savings; because the appreciation of the real exchange rate produces a reduction in the share of profits in national income – as the actual wages increases with respect to the labor productivity.
  - As the propensity to save from profits is greater than the propensity to save from wages; it follows that the reduction profit share due to an appreciation of the exchange rate will result in a reduction in domestic private savings.

Core Propositions

- 7 – The abundance of natural resources in a given country makes the industrial equilibrium exchange rate – defined as that level of the exchange rate that makes domestic firms, for a given level of technological gap, to be competitive both in domestic and international markets – is greater than the exchange rate which guarantees balance in the current account.
  - In this way, the long-term sustainability of the economic growth process of countries with abundant natural resources requires that they have surplus in the current account.

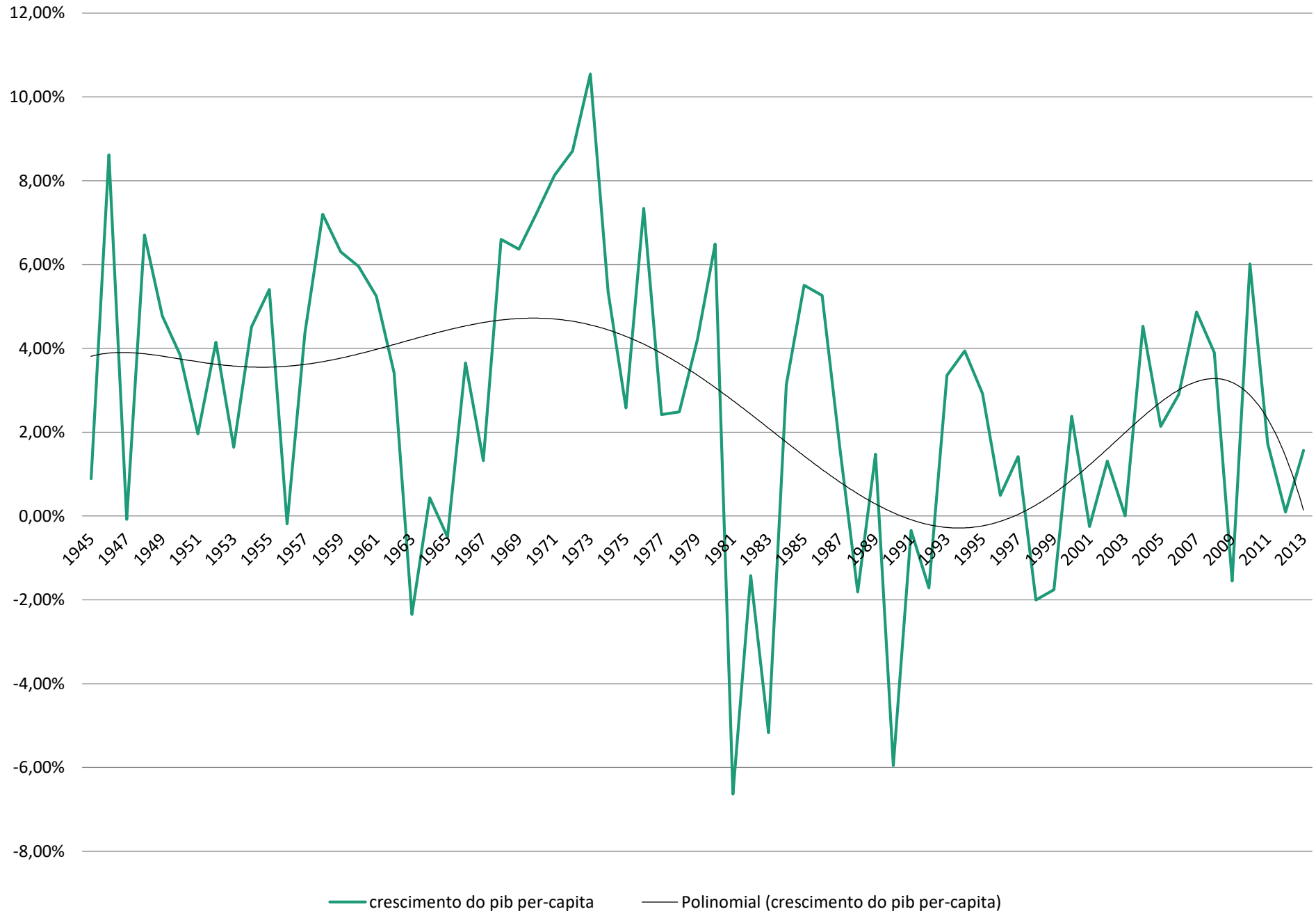
Core Propositions

- 8 – The adoption of an external savings growth strategy by many middle-income developing countries, mainly in Latin America, in the 1990´s was another source of real exchange rate overvaluation.
  - Growth with external savings requires policymakers to set the level of domestic interest rates at level higher them the one corresponding to the sum of international interest rate and country risk premium.
  - The interest rate differential induces foreign capital inflows, resulting in a surplus in the balance of payments´ capital account and a real exchange rate appreciation relative to the level of current account balance.
  - The adoption of such strategy requires financial liberalization, mainly capital account liberalization due to the elimination of capital controls.

The Middle Income Trap and New-Developmentalism

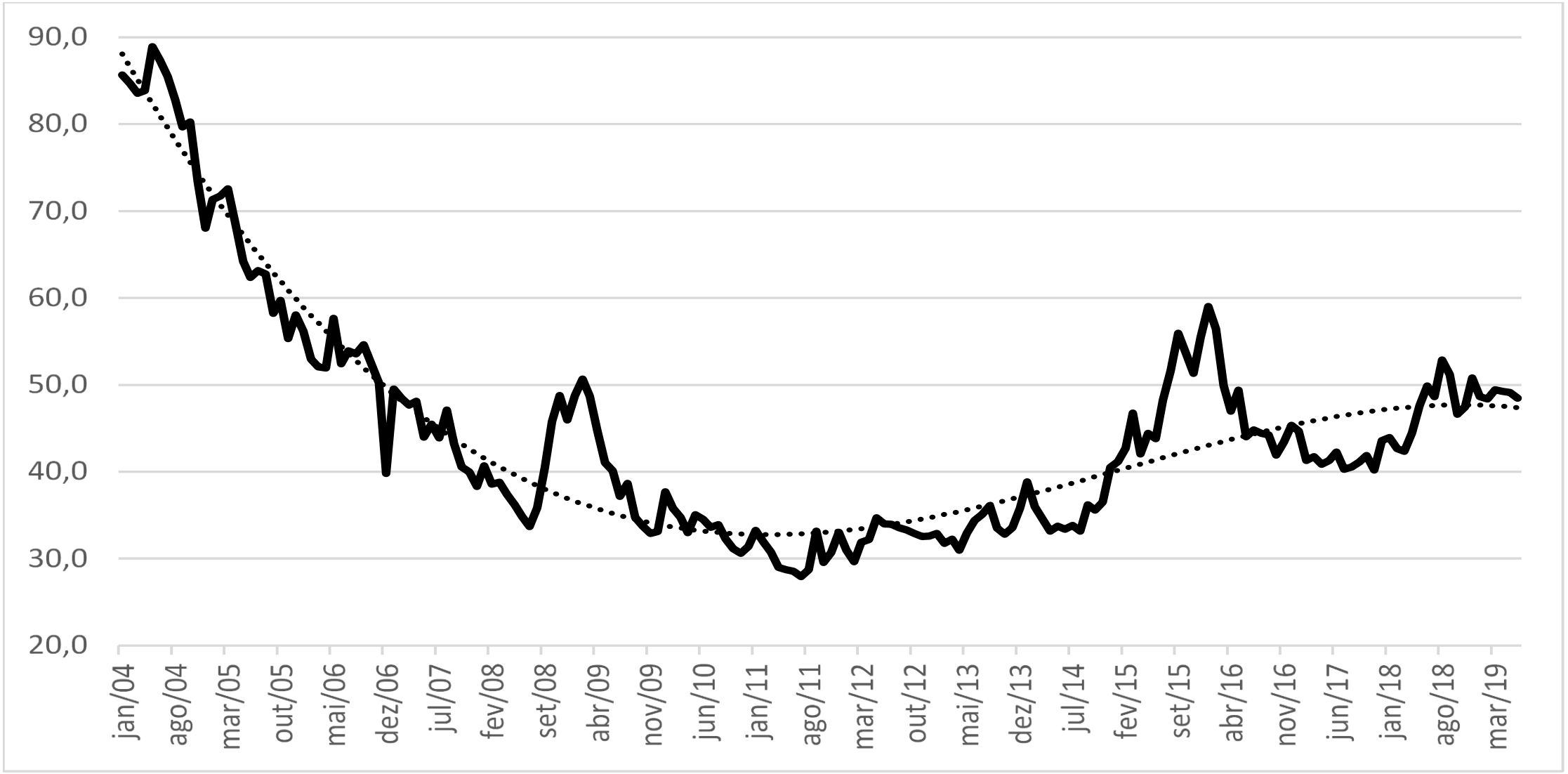
- Based in such principles, new developmentalism can also be considered as an explanation for the *Middle-Income Trap* – MIT hereafter - in which many developing countries seems to be stuck.
  - According to Glawe and Wagner (2016) a MIT usually refers to countries that have experienced rapid growth and thus quickly reached middle-income status, but then failed to overcome that income range to further catch up to the developed countries.
  - That was precisely the case of middle-income Latin American countries such as Brazil and Argentine.
  - New developmentalism asserts that a MIT can occur in countries where Dutch disease suddenly appears due to the discovery of natural resources (for example, new petroleum reserves in Brazil after 2006) or ceased to be neutralized and/or the adoption of an external savings growth strategy. In both cases, real exchange rate overvaluation is the ultimate consequence of a *class coalition* between workers and the rentier class that favors exchange rate appreciation due to its positive effects over inflation and real wages, on one hand; and financial income, on the other (Bresser-Pereira, 2015).
  - Although the long-lasting effect of exchange rate overvaluation will be premature deindustrialization and falling behind; the short and medium-term effects of such overvaluation seemed to be enough positive for sustaining this political coalition, making very difficult or even impossible for a *developmental coalition* to be formed in order to eliminate the MIT The term *class coalition* is due to Bresser-Pereira (2015) and refers to a political (implicit) alliance between groups that belongs to different social classes that aim to reach some political and economic goals.
  - Class coalitions are possible because social classes are not homogenous; but have internal divergences regarding their goals. Such divisions allowed the occurrence of political coalitions between groups that belongs to different social classes.
  - A developmental coalition would be formed by industrial entrepreneurs, manufacturing workers and politicians in order to eliminate the sources of the real exchange rate overvaluation, allowing the economy to get rid of the MIT.

Taxa de Crescimento do PIB per-capita no Brasil , US$ de 2013 (1945-2013)



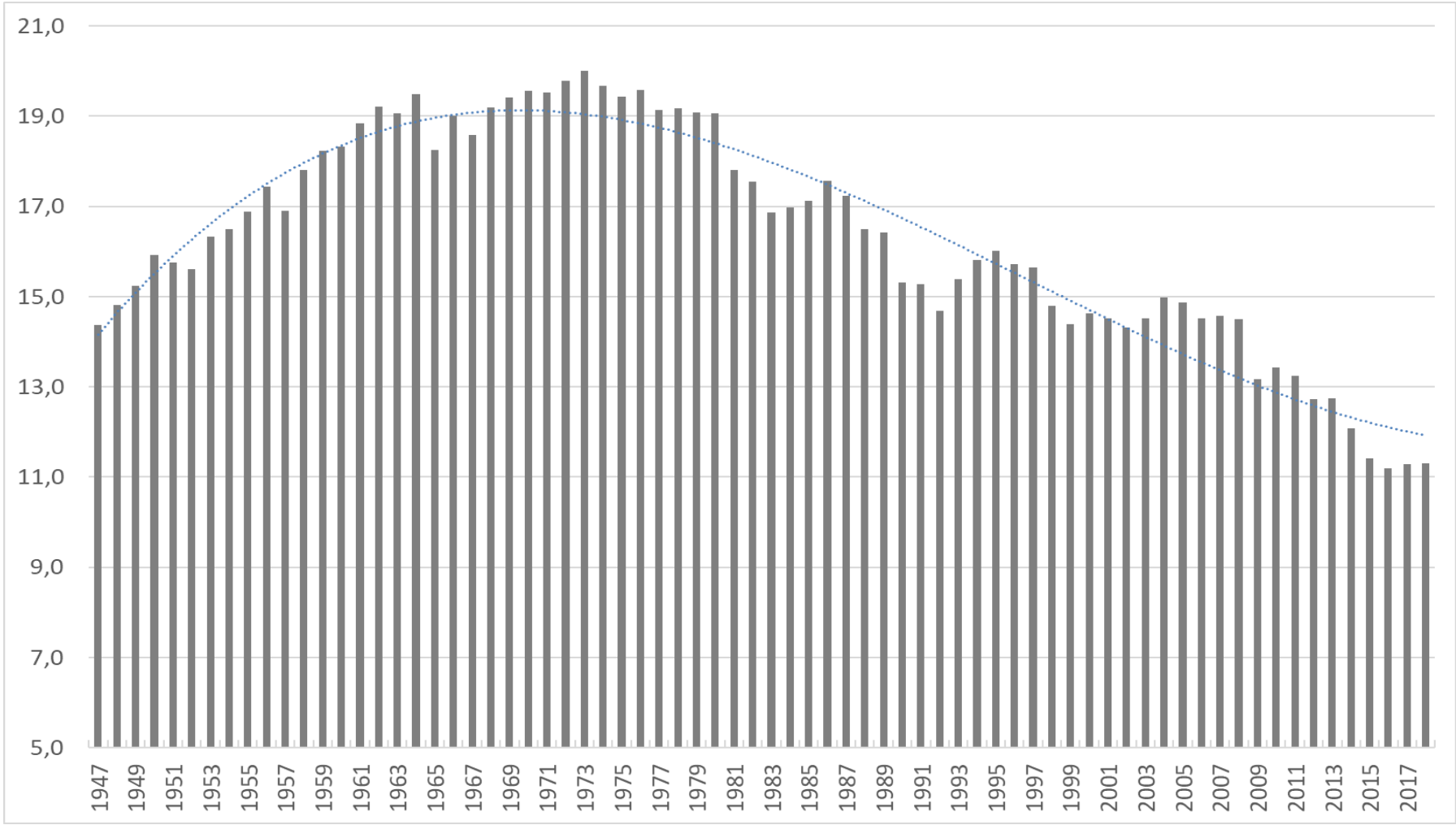
Evolução da Taxa de Crescimento do Produto por Trabalhador e do Estoque de Capital por Trabalhador no Brasil (1994-2012)

Gráfico 17: Relação câmbio/salário (%)



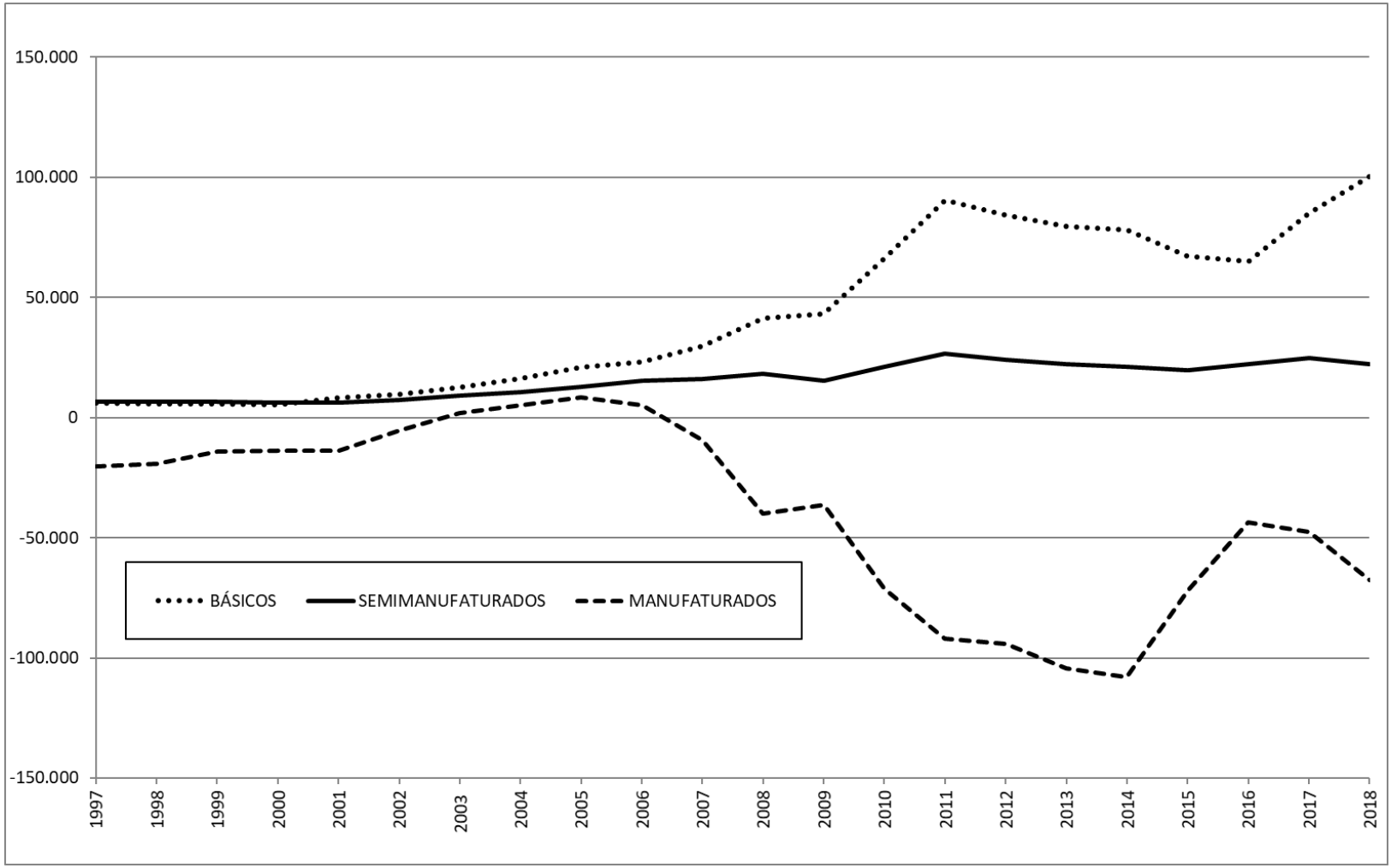
Fonte: Banco Central do Brasil (2019).

Gráfico 15: Participação da indústria no valor adicionado ao PIB (% no total)



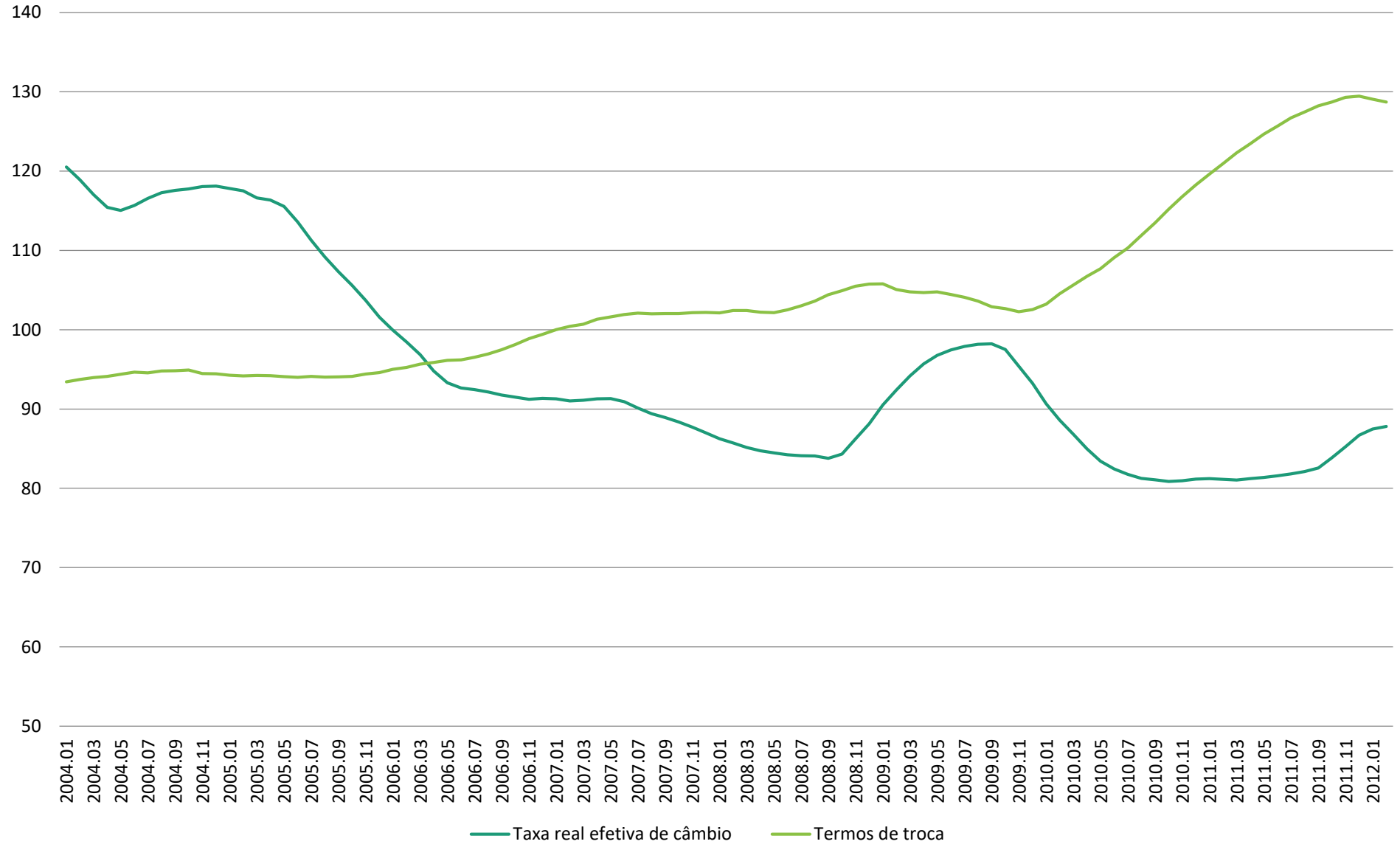
Fonte: IBGE (2019)

Gráfico 16: Evolução do saldo da balança comercial por setor (US$ milhões)



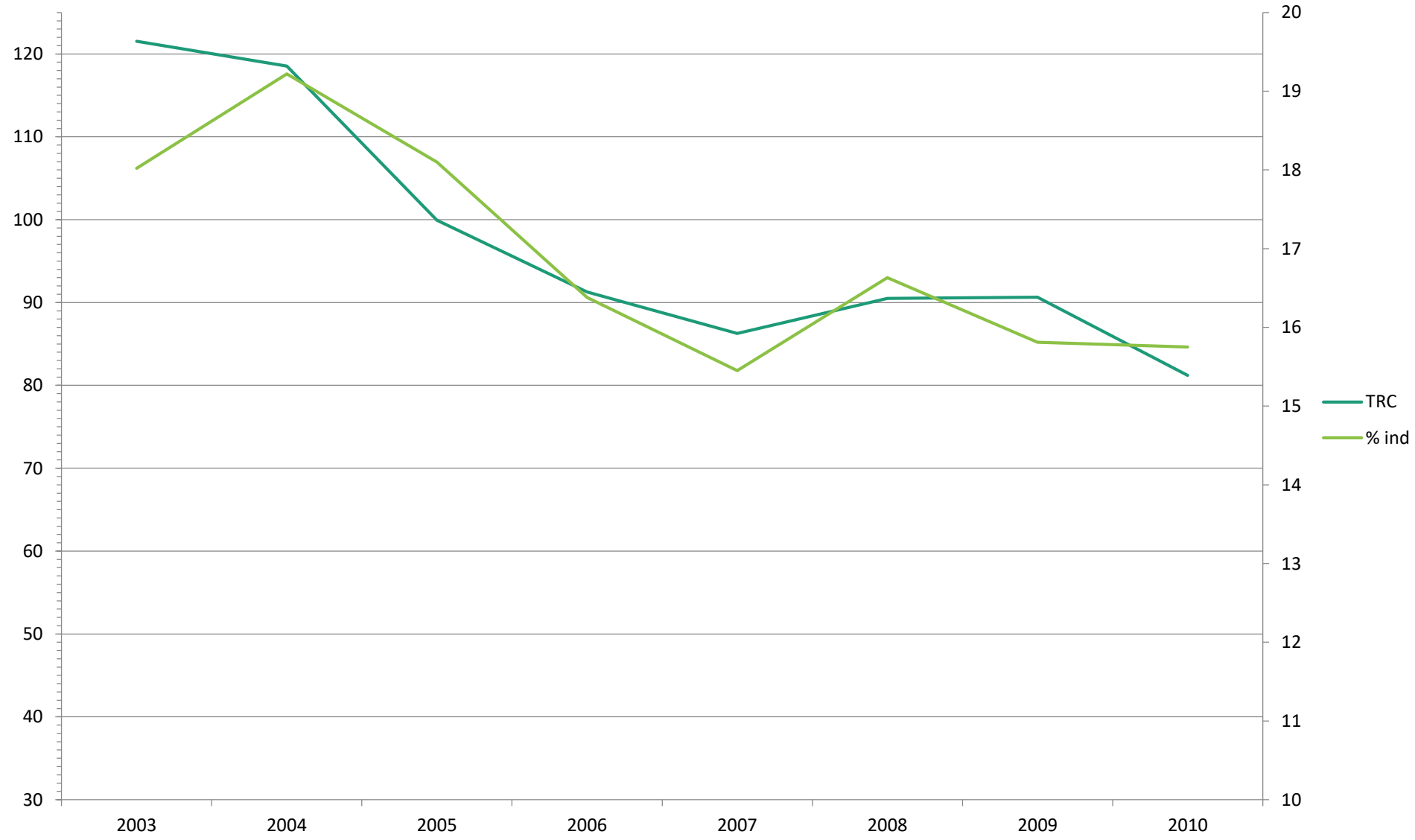
Fonte: MDIC (2019).

Taxa real efetiva de câmbio e termos de troca da economia brasileira (2004/01-2012-01)



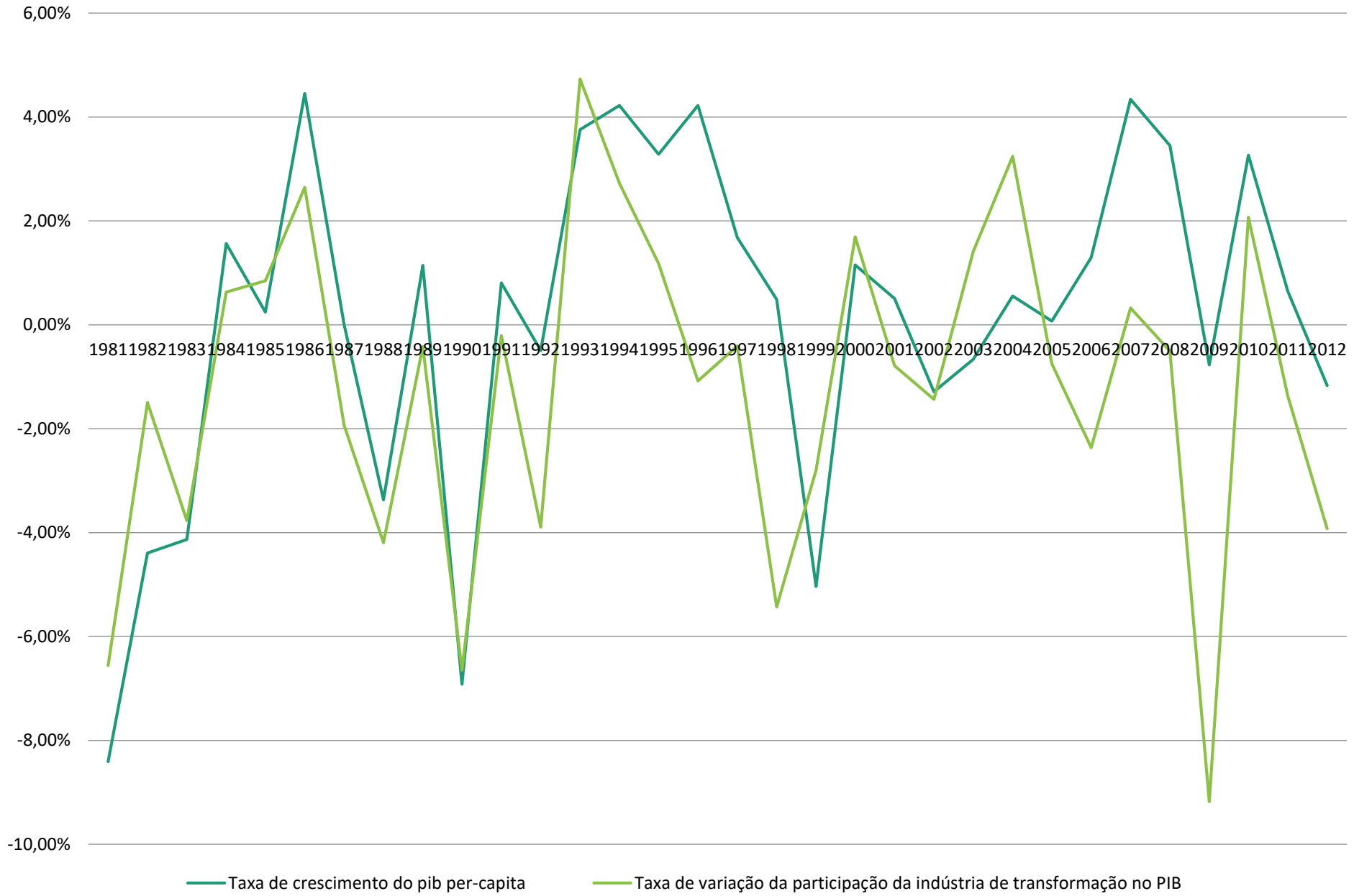
Fonte : IPEADATA, Elaboração própria

Evolução da Taxa Real Efetiva de Câmbio e da Participação da Indústria de Transformação no PIB da Economia Brasileira (2003-2010)



Fonte : IPEADATA, Elaboração própria

Taxa de Crescimento do PIB Per-Capita e Taxa de Variação da Participação da Indústria de TRansformação no PIB (1981-2012)



$$\hat{e} = g_Y - g_y - n \qquad (4)$$

$$g_y = \frac{\alpha_0}{1 - \beta_0 \gamma} \qquad (2)$$

$$g_Y = \alpha . g_g + (1 - \alpha) . g_x + \dot{h}\sigma \quad (13)$$

$$\dot{u} = u . \left[\alpha g_g + (1 - \alpha) g_x + \delta + \dot{h}\sigma - \frac{h}{v} . u \right] \quad (16)$$

$$\dot{h} = h . \mu . (u - u_n) \qquad (17)$$

$$\dot{\alpha} = \alpha . (1 - \alpha) . \left(g_g - g_x \right) \quad (18)$$

$$\hat{\gamma} = \ \gamma_1 \left(q - q^i \right) \quad (25)$$

$$\bar{d} = d_0 - d_1 q \qquad (26)$$

$$\bar{d} = \ ca_0 + ca_1 (i - i^f - \rho) \qquad (30)$$

$$\pi = \frac{z_0 + z_1 q}{1 + z_0 + z_1 q} \quad (36)$$

$$\hat{p} = \mu_1 (\pi - \pi^*) + \mu_2 \hat{p}_{-1} - g_y \qquad (41)$$

Steady-State solution

The steady-state solution requires $\hat{e} = \dot{u} = \dot{h} = \dot{\alpha} = \hat{\gamma} = 0$, and $\hat{p} = \hat{p}_{-1}$. So, we get:

$$\frac{\alpha_0}{1-\beta_0\gamma} + n = g_x \quad (4a)$$

$$u = u_n \quad (20)$$

$$h = \frac{(g_x + \delta).v}{u_n} \quad (21)$$

$$g_g = g_x \quad (19)$$

$$q = q^i = \frac{\gamma_2}{\gamma_1} G - \frac{\gamma_0}{\gamma_1} \quad (24)$$

$$q = q^{ES} = \frac{d_0 - \bar{d}}{d_1} \quad (29)$$

$$i = (i^f + \rho) + \left[\frac{\bar{d} - ca_0}{ca_1}\right] \quad (31)$$

$$\pi = \frac{z_0 + z_1 q}{1 + z_0 + z_1 q} \quad (36)$$

$$\hat{p} = \frac{\mu_1}{1-\mu_2}(\pi - \pi^*) - \frac{\alpha_0}{(1-\beta_0\gamma)(1-\mu_2)} \quad (42)$$

Over-determination problem

The exogenous variables of the model are: n , g_x, u_n, v, δ, G, $\bar{d}$, i^f , ρ and π^*; and the endogenous variables are: γ, u , h , g_g, q , i , π and $\hat{p}$. There are eight endogenous variables for a system with nine independent equations, which means that the *model is over-determined*.

Over-Determination Problem

The over-determination problem occurs because real exchange rate had to accomplish two different roles in the model.

The first role is to generate a sufficiently high level of *price competitiveness* in order to compensate domestic firms for their lack of *non-price competitiveness* due to technological gap.

- The level of real exchange rate that do this role is the *industrial equilibrium exchange rate*.

The second role is to attract foreign capital flows in order to generate the desired level of external savings by policymakers.

This requires for policymakers to set domestic interest rates at a level higher than the one given by the sum of international interest rate and country risk premium.

It is impossible for the real exchange rate to accomplish both roles, since due to the existence of Dutch disease, a real exchange rate at the industrial equilibrium level would generate a negative external saving (a current account surplus), just the opposite of what is desired by policymakers.

The only possible solution for the over-determination problem is to make *d* an endogenous variable, which means that policymakers may let the current account deficit to assume the value that is compatible with the real exchange rate at its industrial equilibrium level.

Getting Stuck in a Middle-Income Trap

- How a developing economy can get stuck in a MIT according to the New Developmentalist School?
- The experience of many Latin American countries in the period between 1970 and 1990 clearly shown that the change in the economic policy regime was the adoption of *some version of the external savings growth model.*
  - *In the case of Brazil this model was* adopted after 1973 in the context of the II PND (Second National Development Plan) in the government of General Ernesto Geisel. The II PND was designed to be a massive program of government investment expenditures in oil exploration and production of capital goods, which are required to complete the process of import substitution that had started in the beginning of 1930. The program generated a huge current account deficit and a fast accumulation of external debt, that increased from USS$ 7.947 million in 1971 to 71.788 million in 1981 (Giambiagi et al. 2005), a 10 time increase in a decade!
  - This evolution of external debt was clearly unsustainable and resulted in an external debt crisis in the early 1980´s, which was the immediate cause of growth slowdown of Brazilian economy during the whole decade. The fully adoption of the *external savings growth model* was only possible, however, in the 1990´s after the financial liberalization occurred during Fernando Collor government, which starts a process of *increasing openness of capital account*.
  - Finally, under Fernando Henrique Cardoso government, the *external savings growth model* was converted in official government policy because the successful implementation of *Plano Real* for inflation stabilization was due to the introduction of an *exchange rate anchor*, which required domestic interest rates at very high level in order to attract foreign capital inflows and make real exchange rate to appreciate.

Getting Stuck in a Middle-Income Trap

- Once the external savings growth model is adopted, real exchange rate starts to overvalue, and will remains in a level that is incompatible with the industrial equilibrium.
- The overvaluation of real exchange rate will start a (premature) de-industrialization process and hence a slowdown in the growth rate of labor productivity.
- There are also be effects over the demand side of the economy
- The appreciation of real exchange rate combined with a reduction of the manufacturing share on real output will both increase the marginal propensity to import and, under certain conditions, will *decrease the size of the super-multiplier*.
- For a given level of autonomous expenditures, there will be a permanent fall in the level of real output and hence on the level of capacity utilization.
- The fall of capacity utilization will result in $u < u^n$, thereby inducing a fall in the investment share ($\dot{h} < 0$).

Getting Stuck in a Middle-Income Trap

- The fall in investment share will result in a reduction in the growth rate of real output [see equation 13] relative to the growth rate of autonomous demand. If the fall in the growth rate of real output was higher than the fall in the growth rate of productivity of labour then employment share will start to decrease.
- The combined result of all these developments (see figure 1) will be stagnation of economic growth, reduction of capital accumulation, de-industrialization, growing levels of excess capacity and increasing unemployment.
- The exchange rate appreciation may also have a negative feedback effect over the growth rate of exports, since the income elasticity of exports can be reduced as a result of the deindustrialization of the economy (See Oreiro, Missio and Gonzaga, 2015).
- The reduction in the growth rate of autonomous demand will reinforce the decrease in the level of employment and in the level of capacity utilization.

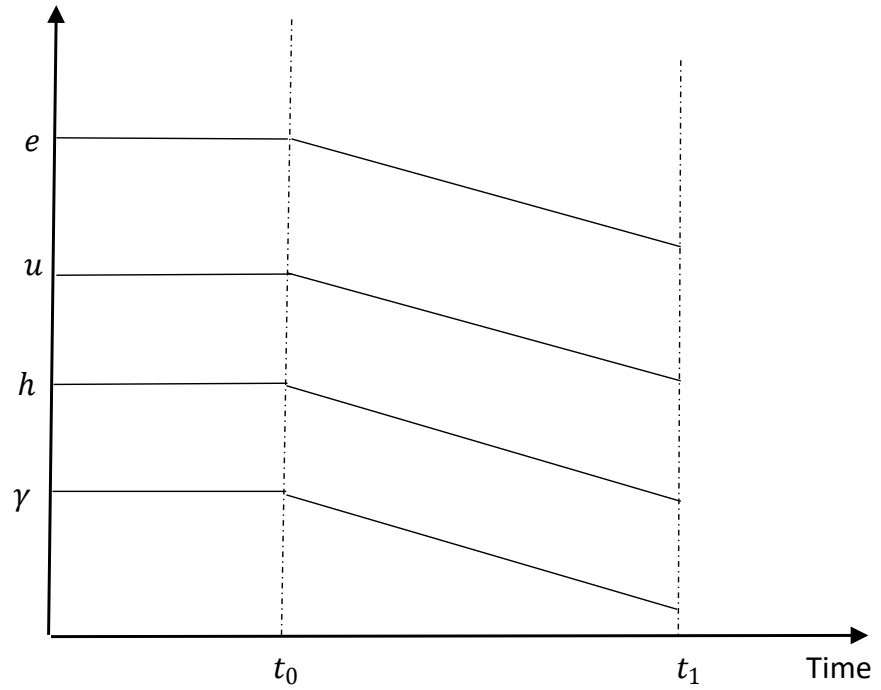


***Figure 1*- Evolution of the Employment share, Capacity Utilization, Investment Share and Manufacturing Share After a Real Exchange Rate Overvaluation due to the adoption of an External Savings Growth Model.**

The Political Economy Problem

The political economy problem to get out of the MIT is that it requires a huge exchange rate devaluation and, hence, a sharp decline in real wages in the short term.

Once real exchange rate is set at level slightly above the industrial equilibrium level, the manufacturing share could start increasing and productivity growth will accelerate.

This will made possible for real wages to grow at a faster rate, making workers to recover their wage losses due to exchange rate devaluation in some years (See Figure 2).

The political economy problem is to convince workers and political actors that the long-term gains compensate the short-term losses.

Brazilian experience in the last 10 years appears to show that this can be an impossible task.

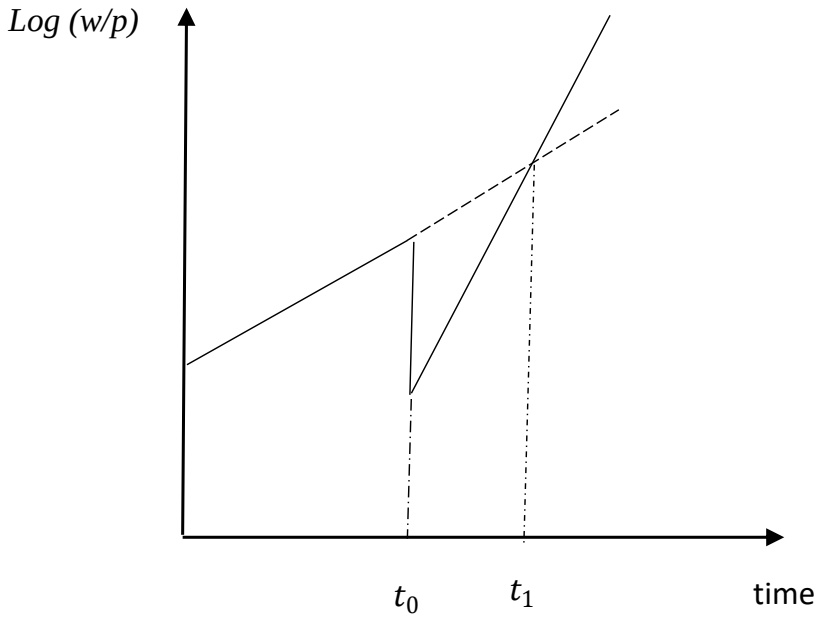


Figure 2: **Evolution of (log) of Real Wages before and after a Real Exchange Rate Devaluation.**

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